

EIA-G11 Meeting Columbus OH June 19-20, 1997
Meeting Notes

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Issues:

Relays

It was stated that one major contractor was considering using real time microfocus X-ray instead of PIND on relays intended for space flight use. This sparked considerable discussion. The consensus was that these tests do not necessarily find the same defects and both tests may be required for optimum reliability, relying on real time x-ray alone was not a popular concept.

Resistors

The principal topic of discussion was the occurrence of cracks in the coating of wirewound resistors. One supplier performs visual at 4X but the cracks cannot be seen at less than 10X. It was stated that the coating from some parts can be scraped off with your fingernail. Style RWR80 shows the problem, but styles RWR81 and 82 do not. Since experiencing this problem, one contractor has changed their SCD to require visual inspection at 20X. DSCC proposed a survey to the EIA members to inspect stock examples to evaluate the prevalence of the problem. The Committee decided to send a letter to the EIA to request incorporation of visual inspection at 20X into MIL-PRF-39007 for T level (space quality) parts.

General

MIL-STD-100 (drawing practices) will not be canceled but it will be streamlined.
MIL-STD-965 (parts control) is canceled. MIL-HDBK-965 lives.

MIL-PRF-55365 (Tantalum Chip Capacitor) Range Extension

A proposal was discussed to make the case size an independent variable in order to allow the rating/case size combination to evolve with the technology. I want qualification to an extended range to include complete Group C except for shock, vibration and other variables likely to be unaffected by the extension.

MIL-PRF-49470 Switch Mode Power Supply (stacked chip ceramic) Capacitors

The response to the draft of this specification has shown that it is not ready for release in its present form. Primary weaknesses of the draft include: life test on only 12 parts per year and with one failure permitted; resubmission of lots failing the PDA for Group A; the need for an application note to cover the need for special mounting of such heavy devices. The manufacturers are objecting to the number of expensive parts that are required for Qualification and Group C testing. A coordination meeting is scheduled for July 17 and 18 at DSCC.

Low voltage, extended range Multi-layer Ceramic Chip Capacitors

A proposal was made to DSCC for them to generate a DSCC drawing and / or a CID to cover MLCs rated down to as low as 10 volts. This is seen as a first step to bringing this leading edge technology into the MIL system.

MIL-PRF-39035/2 (variable resistor) Shorter Lead length

The Committee agreed to DSCC's proposed change to cover the change for the minimum lead length from 0.3" to 0.172". This affects the Established Reliability (ER) RJR24 style; the non ER RJ24 is already at 0.172". Bourns is the only QPL source. This could affect NASA usage as EPIMS shows that TIROS (POES) has used the RJR24; other projects not in EPIMS could be also.

MIL-R-39008, carbon Composition Resistors

RCD has approached DSCC with a proposal to qualify to M39008. The Committee consensus was that most 39008 users have switched to alternatives and will not go back to carbon composition resistors. The consensus recommendation was to offer a DSCC drawing instead of MIL-R-39008 to make parts available most rapidly and to allow RCD to assess the market demand. More information is needed: where will the parts be made, by whom, what is the timeframe? Most members were also curious about the origin and nature of the technology/process to be used as Allen-Bradley has reportedly refused to sell its equipment.

DSCC drawing 97004, 2W film resistor: This new drawing is a way to quickly introduce and establish market demand for the RLR62 size which is included in MIL-PRF-39017. It is smaller than the RLR42 which it will replace.

MIL-PRF-39014/16, 17, 18, and 19 Ceramic Feedthrough Capacitors

The only source for these parts, Tusonix have removed themselves from the QPL. DSCC drawings have been created to cover these parts instead and it is expected Tusonix will be a source.

MIL-PRF-39014 Life Test Conditions

Recent concerns about voltage conditioning of stacked chip ceramic capacitors to DESC drawing 87106 raised another problem. It was observed that 87106 references MIL-PRF-39014 for life test conditions. The MIL-PRF-39014 base specification states the life test is performed at 85°C but all M39014 slash sheets supersede this with a requirement for 125°C. There is general agreement that the correct life test temperature for the stacked chip parts is 125°C and that was the intention of 87106. M39014 needs to be changed to require 125°C; DSCC will pursue.

RWR Resistors:

The lack of post cure on one supplier's RWRs may be producing an outgassing problem. The problem is that the supplier is not post curing the silicone coating because they do not need to do so to meet the marking permanency test. It was decided that the members would check inventories for available samples and perform outgassing testing where possible. The samples should be RWR80s as this is related to the cracking problem (see above). EPIMS shows the RWR80 is popular with GSFC projects including EOS.

MIL-PRF-39007 and 39009, Wirewound Resistors:

A problem has surfaced in the way these two specifications cover low resistance values (down to 0.1 ohms): the delta allowances for some tests may permit changes many times the nominal resistances and these deltas are also inconsistent between tests. DSCC to pursue.